

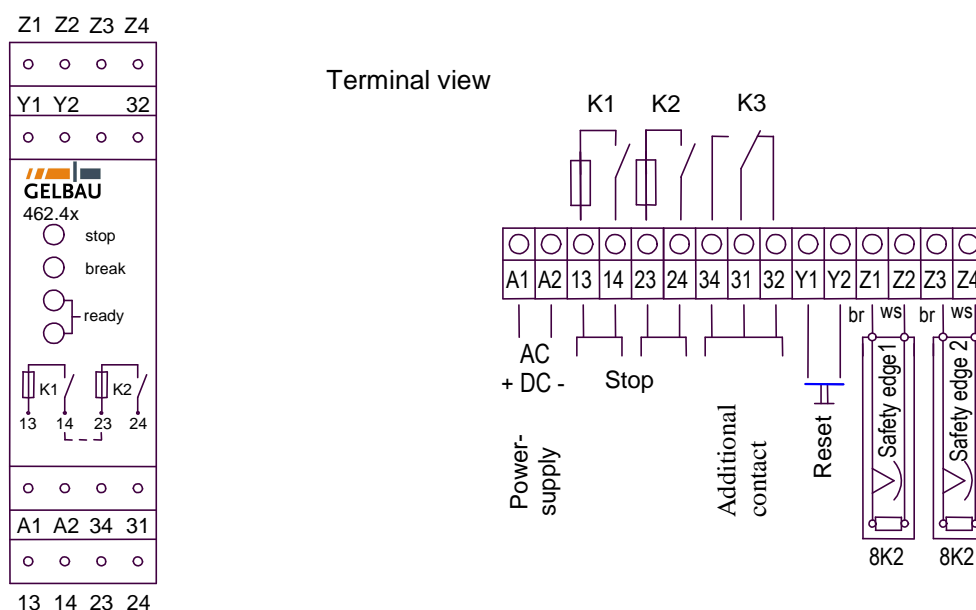
Feature

The resistance evaluator 462.4x is a safety-switching unit designed for monitoring GELBAU Contact-Duo safety connecting blocks with a terminating resistance of 8,2 kΩ. The series 462.4x is a dual-channel version including redundancy monitoring.

The stop-outputs (13,14-23,24) include 2 forced safety relays and a reset-function. The additional two-way contact (31, 32, 34) is an alarm contact as well as an auxiliary contact.

The safety system corresponds to standards according to ZH1/494 as well as the European standard EN1760-2 for connecting blocks corresponding to output-equipment.

Construction



Bridge Y1;Y2 = automatic reset

Function

The safety-switch unit is controlled by a closed circuit current. To start the device press reset-contact (Y1, Y2). When correctly connected in ready-mode the safety contacts (13, 14-23, 24) are connected and both green LED's are on. If the Duo-contact-edge is activated (pressed) the relays K1 and K2 de-energise and the safety contacts (13, 14-23, 24) are open. The red LED is on (stop). If the closed-circuit current between Z1 and Z2 or Z3 and Z4 is interrupted the red (stop) LED is on and if in reset mode even the yellow LED (break) is on. Safety-switches 13, 14-23, 24 are open.

The additional change-over contact 31, 32, 34 connects synchronous to STOP contact 13, 14.

An automatic reset can be achieved by connecting terminals Y1 – Y2.

Important: The additional change-over contact 31, 32, 34 is an auxiliary contact and must not be used in safety-circuit.

Function table (status indication for sensor)

Sensor-profile condition	LED red	LED yellow	LED green (2x)	Output 13,14,23,24
Correct connected; not activated			on	closed
Sensor 1 or2 activated (pressed)	on			open
Sensor 1 or2 interrupted (disconnected or break)	on	on *1		open

*1 = only by activated reset or automatic reset

Assembly, Application

1. The switch-cabinet housing is ready for mounting on a 35 mm DIN rail (TS35) according to DIN 50022. For switchboard installation, a 26 mm rail-segment with 2 drillings is available.
2. The GELBAU contact-duo connecting-block(s) with an end-terminated resistor is connected to clamps Z1 Z2 and Z3 Z4. Please note that the brown wire is connected to terminal Z1 (Z3) and the white (blue) wire is connected to terminal Z2 (Z4).
If you want to install one contact-duo connecting-block (Z1,Z2) the second input must be terminated with a 8,2k Ω resistor.
3. The safety-relay outputs 13,14-23, 24 may be loaded with max. 4 A (AC). The additional change-over contact 31, 32, 34 can be loaded with 4 A.(Max. switching voltage 250 V AC)
4. Power supply must be connected to terminals A1 and A2. The phase-wire is connected to A1.

The installation and putting into operation of this device has to be done by qualified staff only.

Trouble shooting problems

1. LED`s are out of operation
Correct side voltage?
2. Constant glow of both red and yellow LED in manual or automatic-reset mode
Is the contact edge connected correctly or is there an interruption in the contact wire?
(Test switch shortly 8,2k Ω resistance between Z1,Z2 and Z3,Z4),interrupt if function is o. k.
3. Constant glow of red LED
Disconnect contact edge and examine it with an ohmmeter (value has to show approx. 8,2 k Ω).
Possibly short-circuit in lead-in wire?
4. Both channels show different status
Send device to your dealer for control and repair.

Technical data**Housing:**

Material: Polyamid PA 6.6
 Protection class: **IP20**
 Dimensions 22,5 x 100 x 110 mm
 Mounting on 35 mm DIN rail
 according to DIN EN 50022
Weight: 300 g

Supply voltages AC:

Typ **462.40:**
 Nominal operating voltage: 230 V -15% +10%
 Nominal frequency: 50 Hz 40 - 60 Hz

Typ: **462.41:**
 Nominal operating voltage: 115 V -15% +10%
 Nominal frequency: 50 Hz 40 - 60 Hz

Typ: **462.44:**
 Nominal operating voltage: 24 V -15% +10%
 Nominal frequency: 50 Hz 40 - 60 Hz
Power consumption: max. 3VA
Supply-device insulation acc. VDE 0551

Supply voltages DC:

Typ **462.46:**
 Nominal operating voltage: 24 V -15% +10%
 Max ripple: max. 10%
Power consumption: max. 3 W
Potential-insulation DC/DC-Converter

Supply voltages AC/DC:

Typ **462.42:**
 Nominal operating voltage: 24 - 230V / AC
 -30% - 10%
 24 - 110V / DC
 -30% +10%
 Power consumption: max. 4W/6VA

Typ: **462.49:**
 Nominal operating voltage: 24 - 60V / AC
 -30% - 10%
 24V - 60V / DC
 -30% - 10%
Power consumption: max. 4W / 6VA
Supply-device insulation acc. VDE 0551

Supply voltages DC:

Typ **462.46U:** (without potential insulation!)
 Nominal operating voltage: 24 V -15% +10%
 Max ripple: 10%
Power consumption: max. 3W

Attention! Supply voltage must have potential Insulation, regarding to VDE 551(Transformer)

Input terminals (Z1,Z2)(Z3,Z4)

Terminal voltage by break 8V DC
 In activated condition (pressed) <4V DC
 In ready mode (not activated) <> 5V DC
 closed-circuit current (not activated) <>
 0,6mA
 switching-resistance for activation <5,5 kΩ
 switching-resistance for break >11,5kΩ
 End-terminal: **resistors 8,2 kΩ**

max. contact-edges-length 100m
 max. connection-cable-length 50m
 connecting wires min. 0,5mm²

Safety-contacts 13,14-23,24:

Contact-type **2 forced Safety-**
 relays
 each normally
 open separate out
 Load **max. 4 A**
 (Internal 4A Fuse)

Reaction-time max. **15ms**
 Contact-edge activated to relays contact-
 output

**Relays-contact data (13,14-23,24):
(31,32,34):**

Switching-voltage max. 250 V AC
 Switching-capacity max. 1200 VA;
 max. 120 W / 24 V
 DC
 Switching-current 4A AC11 220V
 2A DC11 24V

mech. durability: 3 x 10⁷ switchings
 elektr. durability: 2 x 10⁵ switchings
 max. switching capacity

Operation temperature: -20°bis + 55°C

Testing guidelines, standards:

-**EN 1760-2** "Pressure-sensitive safety
 devices" (specific sections relating to the
 output-switching device)
 -**EN 954-1** "Machine-safety components in
 Control units"
 -**ZH 1/494**

Technical modifications reserved.